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New Species of Chimarra from Mexico and Central America (Trichoptera, Philopotamidae)

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The Nearctic species of *Chimarra* contain data which should be highly informative concerning the evolution of aquatic insects in the eastern and central United States, especially during Pleistocene time. Up to the present, however, efforts to extract and apply this information have been hampered seriously because of the polyphyletic nature of our *Chimarra* fauna. The chief difficulty seems to be that the United States fauna of *Chimarra* has probably arisen from several phyletic lines having an origin in Mexico, and our knowledge of the Mexican fauna is fragmentary. An effort is made in this paper to describe new species from Mexico and Central America as the first step in adducing the phylogeny of this interesting group.

Holotypes and some paratypes described in this paper are deposited in the collection of the Illinois Natural History Survey; other paratypes are deposited in the Escuela Nacional de Agricultura, Mexico City, D. F.

Subgenus CHIMARRA Stephens

The first 11 species described herein belong to the *aterrima* group of the subgenus *Chimarra* as defined by Ross (1956). In all of these species the ninth segment has a large ventral keel, the cercus is button or biscuit shaped, and the tenth tergite has two pairs of lobes of which the mesal pair are membranous and often inconspicuous, and the aedeagus has one or two pairs of simple rods in addition to other unpaired internal structures.

Chimarra embia new species

The simple claspers and processes of the tenth tergite are not only diagnostic for this species but also indicate that it is probably one of the most primitive known members of the *aterrima* group.

Male: Length 4.5 mm. Color very dark brown, the dorsal surface blackish, the legs a slightly lighter shade of brown. General structure and venation typical of the *aterrima* group. Male genitalia as in fig. 1. Ninth segment constricted near middle of lateral margin, with a rather narrow dorsal position. Claspers elongate and narrow from both lateral and posterior views, with a simple mesal lobe near middle. Tenth tergite with both mesal and lateral lobes short and pointed. Aedeagus with two short pairs of simple rods.

Holotype ♂.—Tonala, Chis., Mex., Sept. 2, 1932, A. Dampf. *Paratypes.*—Mexico (all at light, A. Dampf): Same data as holotype, 11 ♂; Tonala, Chis., May 23, 1926, 7 ♂; Rio Ixtepec, Oax., July 30, 1938, 5 ♂; La Forestal, Ver., May 22, 1926, 7 ♂.

Chimarra ovalis new species

An unusually distinctive member of the *aterrima* group, set off from all others by the spikelike lateral lobes of the tenth tergite.

Male: Size, color, and general structure similar to the preceding. Male genitalia as in fig. 2. Ninth segment forming a wide ring. Clasper fairly long and broad, bearing a series of long apical dorsal spines; the dorsal margin is incised and curved mesad to form a large mesal projection. Lateral lobes of tenth tergite narrow, spikelike, and heavily sclerotized. Aedeagus with two simple rods, one of medium length and the other twice as long.

Holotype ♂.—Salto de Agua, Chis., Mex., Apr. 28, 1938, A. Dampf.

Chimarra volenta new species

This species is probably closest to *ovalis,* differing in the shorter clasper and much higher lateral lobes of the tenth tergite.

Male: Length 6.5 mm. Color and general structure as for *ovalis*. Male genitalia as in fig. 6. Ninth segment somewhat narrowed dorsally. Clasper short, almost quadrate, the dorsal margin produced mesad to form a short lobe. Lateral lobes of tenth tergite high near the base, then tapering almost to a point at apex. Aedeagus with two simple rods, both of them massive at base, tapering and heavily sclerotized, one fairly long and the other only two-thirds as long.

Holotype ♂.—No data but submitted by A. Dampf and presumably collected in Mexico.

Chimarra acuta new species

This and the following species are readily distinguished from other members of the *aterrima* group by the curious forked mesal process on the dorsal margin of the clasper.

Male: Size, color, and general structure similar to *embia*. Genitalia as in fig. 3. Ninth segment with very broad ventral lobes; the dorsal portion forms a ridge at the base of the tenth tergite. Clasper broad at base, tapering dorsally to a narrow apex which curves abruptly mesad and is incised and almost clawlike at the tip. Lateral lobes of tenth tergite short and blunt. Aedeagus with two subequal simple setae, both very long.

Holotype ♂.—Cuernavaca, Mor., Mex., Apr. 30, 1932, at light, A. Dampf. *Paratype*.—Same data as holotype, but Mar. 2, 1932, 1 ♂.

Chimarra boneti new species

This is a sister species of the preceding, differing from it in the truncate apex of the clasper and the dissimilar simple rods of the aedeagus.

Male: Size, color, and structure similar to the preceding. Male genitalia, fig. 4, similar in most respects to the preceding with the following differences: lateral lobes of the tenth tergite slightly shallower; lateral view of clasper with the tip forming an obliquely truncate and slightly expanded apex; the two sim-

ple internal rods of the aedeagus dissimilar, one long and only slightly curved, the other shorter and markedly arcuate.

Holotype ♂.—Ocosingo Valley, Chis., Mex., Finca El Real, July 1, 1950, at light, Rio Sta. Cruz, C. & M. Goodnight and L. J. Stannard. *Paratypes.*—Same, but Finca Monte Libano, July 4, 1950, 2 ♂.

Chimarra schiza new species

This species differs from others in the *aterrima* group by the combination of the short clasper and the deep and rounded lateral lobes of the tenth tergite.

Male: Length 5.5 mm. Color a deep almost bluish black, the under parts and legs with a brownish cast. General structure as for *aterrima* group. Genitalia as in fig. 5. Ninth segment markedly narrow dorsally. Clasper short, almost quadrate from lateral view, with a row of four setae on apical margin. Lateral lobes of tenth tergite deep and rounded at apex. Aedeagus with two subequal simple spines which are long, slender, and parallel.

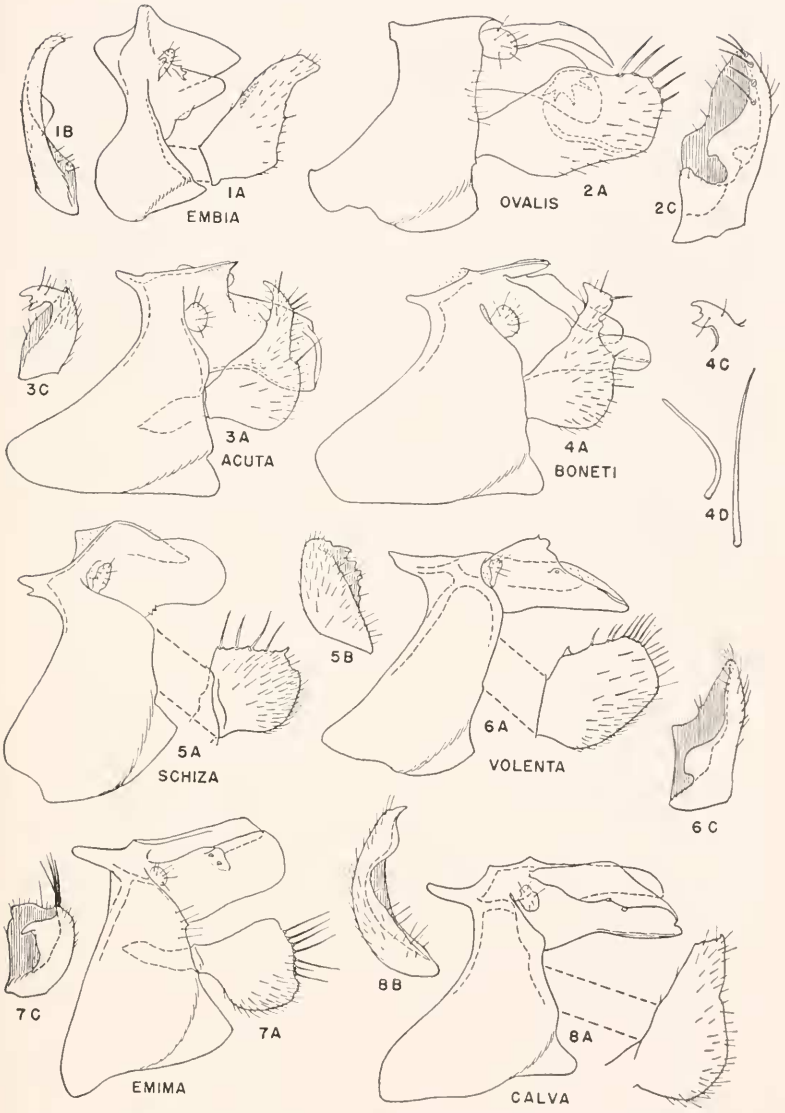
Holotype ♂.—Huajuapan, Oax., Mex., Nov. 8, 1944, at light, A. Dampf.

Chimarra emima new species

In the quadrate clasper this species resembles the preceding, but *emima* differs from *schiza* in the dorso-mesal tooth of the clasper and the dorsal position of the two sensillae on the lateral lobes of the tenth tergite.

Male: Length, color, and general structure similar to the preceding. Male genitalia as in fig. 7. Ninth segment narrowed dorsally. Clasper short and somewhat quadrate, with a row of long setae on the apical margin. Tenth tergite with lateral lobes fairly long and deep, nearly parallel-sided, slightly rounded at apex, and with the sensillae on a slight elevation near dorsal margin. Aedeagus with two heavily sclerotized simple rods, one very long and the other about half as long.

Holotype ♂.—Madden Dam, C. Z., Jan. 20–23, 1946, Eliot C. Williams, Jr.



FIGS. 1–8.—Male genitalia of *Chimarra*. *A*, lateral aspect; *B*, posterior or postero-ventral aspect of clasper; *C*, dorsal aspect of clasper; *D*, simple rods of aedeagus.

Chimarra calva new species

From all but *embia* this species differs in the elongate and simple clasper; from *embia* it differs markedly in the elongate lobes of the tenth tergite.

Male: Size, color, and general structure similar to the preceding. Genitalia as in fig. 8. Ninth segment markedly narrowed dorsally. Clasper moderately large at base, tapering to apex, from posterior view narrow and sinuate. Tenth tergite with lateral lobes long and large, the lateral face traversed by a sinuate crease on which are situated the two sensillae. Aedeagus with two simple rods, one of moderate length and the other only half as long.

Holotype ♂.—Tecpatan, Chis., Mex., Sept. 1, 1946, A. Dampf. *Paratypes.*—Mexico: Chiltepec, Oax., Dec. 9, 1937, at light, A. Dampf, 2 ♂; Hacienda, Santa Engracia, Tamaulipas, Mar. 9, 1939, C. C. Plumber, 8 ♂; Santa Engracia, Tamaulipas, Apr. 16, 1936, at light, A. Dampf, 1 ♂; same but Mar. 21, 1936, 2 ♂; Tamazunchale, Mar. 29, 1951, at light, J. D. Lattin & N. Walker, 21 ♂.

Chimarra curfmani new species

This species is easily distinguished from other members of the *aterrima* group by the mesal thickenings on the clasper.

Male: Size, color, and general structure similar to the preceding. Genitalia as in fig. 9. Ninth segment only moderately narrowed dorsally. Clasper fairly narrow and high, its posterior face also narrow and with a series of sclerotized thickenings on the mesal edge. Lateral lobes of tenth tergite short and deep, the apical area with a wide flange just above the ventral margin. Aedeagus with two simple rods which are long, stout, slightly curved, and subequal in length.

Holotype ♂.—Ocosingo Valley, Chis., Mex., Finca Monte Libano, July 4, 1950, at light, C. & M. Goodnight and L. J. Stannard. *Paratypes.*—Mexico: same data as holotype, 1 ♂; Rancho Monter, Oax., Dec. 16, 1937, at light, A. Dampf, 5 ♂.

Chimarra setosa new species

The short clasper is suggestive of both *schiza* and *emima* but from both of these *setosa* differs in the curious shape of the lateral lobes of the tenth tergite.

Male: Size, color, and general structure as for the preceding. Male genitalia as in fig. 10. Ninth segment markedly narrowed dorsally. Clasper short and somewhat quadrate, its apical margin with a row of long setae. Lateral lobes of tenth tergite incised at apex to form small lateral and apical lobes, the two sensillae situated on the former. Aedeagus with one very long and tapering simple rod, and another half as long, stouter, more heavily sclerotized, and with a minute right-angle hook at its tip.

Holotype ♂.—Finca Vergel, Chis., Mex., May 19, 1935, at light, A. Dampf. *Paratypes.*—Mexico: Same data but May 9 to June 13, 1935, 63 ♂; Finca Victoria, Chis., May 29, 1935, at light, A. Dampf, 1 ♂; Finca Esperanza, Chis., June 20, 1938, at light, A. Dampf, 6 ♂; same but June 5, 1939, 3 ♂; same but June 26, 1939, 2 ♂.

Chimarra cornuta new species

The shape of the clasper suggests a relationship with *boneti,* from which this species differs in the shorter ninth tergite and the shape of the lateral lobes of the tenth tergite.

Male: Size, color, and general structure as for the preceding. Genitalia as in fig. 11. Ninth segment narrowed dorsally, the tergite forming a well-defined lateral spur at the base of the tenth tergite. Clasper short and stocky, with a large ventral portion and a narrow apical portion; seen from above this latter curves mesad and ends in a sharp point. Tenth tergite with lateral lobes long, deep at base and narrowing and curved at apex, the two sensillae situated on a flange near the dorsal margin. Aedeagus with two subequal simple rods which are long and fairly straight.

Holotype ♂.—Finca Vergel, Chis., Mex., May 11, 1935, at light, A. Dampf. *Paratype.*—Mexico: Finca Esperanza, Chis., Sept. 21, 1938, at light, A. Dampf, 1 ♂.

Subgenus **CURGIA** Walker

The three following species belong to a compact group characterized as follows: The ninth segment tapers to a dorsal point, the claspers are small and heavily sclerotized, the tenth tergite is a single structure which has a large cluster of small sensillae at its apex, and the eighth tergite, fig. 12, bears setose lobes and sometimes other ornamentations.

Chimarra brustia new species

This species is a close relative of *laguna* Ross, differing from it only in the ornamentation of the eighth tergite.

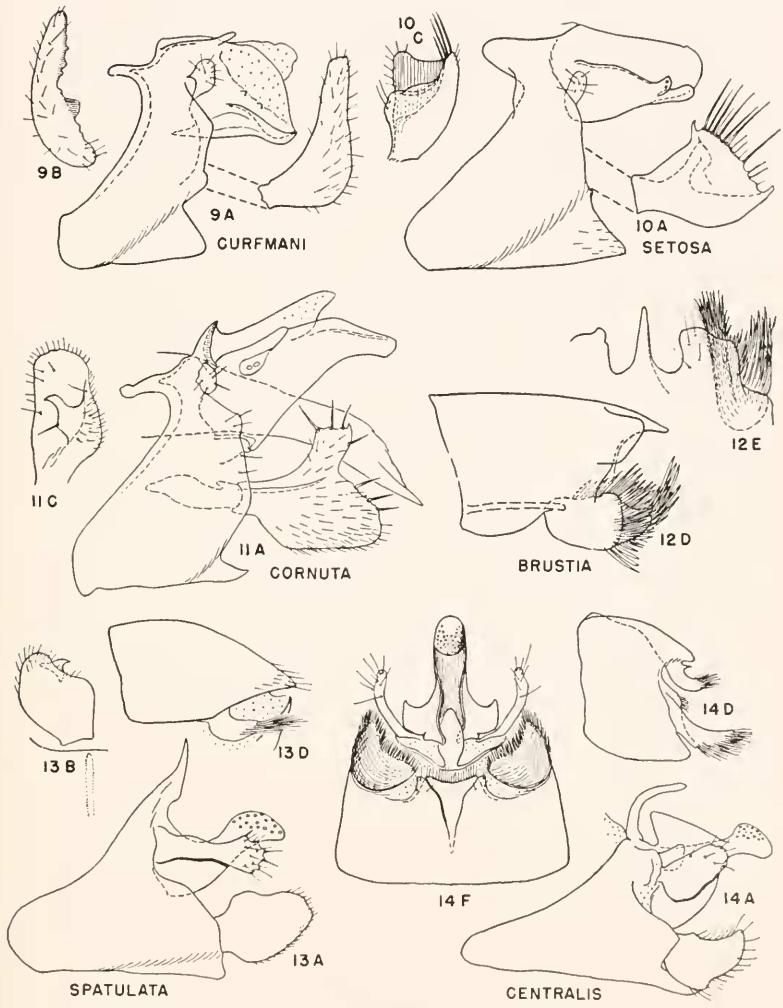
Male: Length 7 mm. Color dark brown, almost black dorsally. General structure as for group. Eighth tergite, fig. 12, with the apical margin incised to form a long central point and a pair of irregular but wide lateral lobes; postero-ventral corner of segment produced into a somewhat quadrate outer lobe bearing an apical brush of setae and, internal to this, a longer and narrower lobe ending in a tuft of long setae. Male genitalia exactly as for *laguna* (see Ross 1951, fig. 2). Ninth segment ending in a sharp ventral process. Tenth tergite deep, upturned, and slightly hooklike. Cercus small and clavate. Aedeagus with two short, stout, simple rods.

Holotype ♂.—Cocula, Guerrero, MEX., Dec. 17, 1936, at light, A. Dampf. *Paratypes.*—MEXICO: Same data as holotype, 1 ♂; Cuernavaca, Mor., July 27, 1932, A. Dampf, 1 ♂; Camomilas, Mor., May 9, 1942, at light, A. Dampf, 1 ♂.

Chimarra spatulata new species

This species is most closely related to the preceding but differs from it in the simpler eighth tergite and the sinuous tenth tergite.

Male: Length 6 mm. Head, antennae, legs, and abdomen red, thorax and wings black. General structure as in the preceding. Genitalia as in fig. 13. Eighth tergite with apical margin wide and slightly emarginate; from its postero-ventral corner arises a small lobe bearing a brush of setae. Clasper small, with



FIGS. 9–14.—Male genitalia of *Chimarra*. *A*, lateral aspect; *B*, posterior or ventral aspect of clasper; *C*, dorsal aspect of clasper; *D*, *E*, lateral and dorsal aspect of eighth tergite; *F*, ventral aspect of genitalia.

a short hooklike tooth on its mesal surface. Cercus situated fairly high on base of tenth tergite, long and spatulate. Tenth tergite sinuate. Aedeagus without simple rods.

Holotype ♂.—Finca Vergel, Chis., Mex., May 22, 1935, at light, A. Dampf. *Paratypes.*—Mexico (all at light, A. Dampf): Finca Vergel, Chis., May 30, 1935, 1 ♂; Ayotzinapa, Gro., Jan. 24, 1941, 1 ♂; Finca Vergel, Chis., May 23, 1935, 1 ♂; Finca Esperanza, Chis., March 26–31, 1939, 1 ♂.

Chimarra centralis new species

This species is most closely related to the preceding and to *persimilis* Banks. From *spatulata* it differs in the winglike process on the aedeagus and from *persimilis* in the short claspers.

Male: Size, color, and general structure as for the preceding. Genitalia as in fig. 14. Eighth tergite with two pairs of apical finger-like lobes, each bearing a brush of setae. Dorsum of ninth segment bearing an erect narrow flap which curves posteriorly. Clasper short and triangular, the posterior face concave. Cercus short and deep. Tenth tergite very deep at base, the apex clavate; at its base there arises a pair of small flaps and from each side near the dorsal margin arises a broad, winglike extension. Aedeagus with three short, stout, simple rods.

Holotype ♂.—Potrerillos, Panama, March, 1934, H. S. Parish. *Paratypes.*—Same data as holotype, 6 ♂.

References Cited

Ross, H. H. 1951. The Trichoptera of Lower California. Proc. Calif. Acad. Sci. Fourth Ser., 27(3): 65–75.

——. 1956. Evolution and Classification of the Mountain Caddisflies. Univ. of Ill. Press, Urbana. 213 pp.